STATEMENT OF BASIS

Minor Air Quality Permit
Permit Renewal

Trail King Industries, Inc – West Plant
Mitchell, South Dakota

South Dakota Department of Environment and Natural Resources

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1.0 Operational Description

Trail King Industries, Inc. – West Plant (Trail King) designs and manufactures custom trailers from steel parts at its facility in Mitchell, South Dakota. Operations at the facility include cutting, welding, fabricating, washing, and painting. The primary Standard Industrial Code (SIC) for the facility is 3715 – Motor Vehicles and Motor Vehicle Equipment – Truck Trailers. The secondary SIC code is 3799 – Miscellaneous Transportation Equipment – Transportation Equipment, Not Elsewhere Classified.

Trail King was issued a minor air quality permit with enforceable limits on August 29, 2007 to avoid the Title V air quality permit program. Trail King submitted an application March 29, 2010 to change the emission collection system for plasma cutting table #4 and was considered an insignificant activity and exempt from permitting.

1.1 Existing Equipment

Table 1.1 provides a description of the existing permitted equipment at Trail King's facility in Mitchell, as outlined in Trail King's August 29, 2007, minor air quality permit.

Table 1.1 – Existing Permitted Equipment Information

Unit	Description	Maximum Operating Rate	Control Device
#1	East Booth – 1988 JBI spray booth. The spray booth uses an air assist electrostatic method of spraying.	Not applicable	Dry filter pads are used to control particulate emissions.
#2	West Booth – 1994 JBI spray booth. The spray uses an air assist electrostatic method of spraying.	Not applicable	Dry filter media to control particulate matter.

On May 22, 2012, the Department of Environment and Natural Resources (Department) received Trail King's application to renew its minor air quality permit for the units in Table 1-1.

The facility operates electric arc welders and plasma cutting tables. The potential particulate emissions from these units are below 2 tons per year. Therefore, in accordance with ARSD 74:36:05:04.01(7), a unit that has the potential to emit two tons or less per year of any criteria pollutant before the application of control equipment is considered an insignificant activity and not included in the Title V air quality operating permit.

Also, abrasive blasting is performed at the facility to prepare metal surfaces prior to painting. Emissions from the shot blast booth are controlled by a Torit dust collection and filtration system. The shot blast booth has no outside emission points and clean air is returned to the building. A separate cartridge filtration system (Torit) is used to remove particulates from smoke and dust generated by welding, cutting and metal fabrication activities. The abrasive blast system does not have any emission points.

2.0 NEW SOURCE PERFORMANCE STANDARDS

The Department reviewed the new source performance standards (NSPS) and determined that Trail King is not applicable to any NSPS at this time.

3.0 NEW SOURCE REVIEW

3.1 New Source Review

ARSD 74:36:10:01 states that New Source Review (NSR) regulations apply to areas of the state which are designated as nonattainment pursuant to the Clean Air Act for any pollutant regulated under the Clean Air Act. Trail King is located in Mitchell, South Dakota, which is in attainment or unclassifiable for all the pollutants regulated under the Clean Air Act. Therefore, Trail King is not subject to NSR review.

4.0 PREVENTION OF SIGNIFICANT DETERIORATION

4.1 Prevention of Significant Deterioration

A prevention of significant deterioration (PSD) review applies to new major stationary sources and major modifications to existing major stationary sources in areas designated as attainment under Section 107 of the Clean Air Act for any regulated air pollutant. The following is a list of regulated air pollutants under the PSD program:

1. Total suspended particulate (PM);
2. Particulate with a diameter less than or equal to 10 microns (PM10);
3. Particulate with a diameter less than or equal to 2.5 microns (PM2.5);
4. Sulfur dioxide (SO_2);
5. Nitrogen oxides (NOx);
6. Carbon monoxide (CO);
7. Ozone – measured as volatile organic compounds (VOCs);
8. Lead;
9. Fluorides
10. Sulfuric acid mist;
11. Hydrogen sulfide;
12. Reduced sulfur compounds;
13. Total reduced sulfur; and
14. Greenhouse gases (carbon dioxide, methane, nitrous oxide, etc.).

If the source is considered one of the 28 named PSD source categories listed in Section 169 of the federal Clean Air Act, the major source threshold is 100 tons per year of any regulated air pollutant, except for greenhouse gases. The major source threshold for all other sources is 250 tons per year of any regulated air pollutant, except for greenhouse gases.

According to the Clean Air Act, once a pollutant is regulated under any part of the Act, (as was the case with greenhouse gas emissions after the motor vehicle regulations were finalized in March 2010) major new sources or major modifications are subject to the PSD program and Title V air quality operating permit program. Under the Clean Air Act, PSD and Title V air quality operating permits are required for all sources that emit a regulated air pollutant above 100 or 250 tons per year, depending on the source. This threshold, if applied to greenhouse gases, would greatly increase the number of facilities requiring a PSD review or Title V air quality operating permit. Based on administrative necessity, EPA increased these thresholds through the "Tailoring Rule."

On May 13, 2010, EPA issued the final version of the "Tailoring Rule" for greenhouse gas emissions. The major source threshold for greenhouse gases is listed below:

1. New PSD source because of a criteria air pollutant, the major source threshold for greenhouse gases is 75,000 tons per year of carbon dioxide equivalent or more;
2. New PSD source if greenhouse gas emissions are 100,000 tons per year of carbon dioxide equivalent or more;
3. For an existing PSD source because of a criteria air pollutant, a major modification for greenhouse gases is an increase of 75,000 tons per year of carbon dioxide equivalent or more;
4. For an existing non-PSD source that has the potential to emit 100,000 tons per year of carbon dioxide equivalent emissions or more, a major modification for greenhouse gases is an increase of 75,000 tons per year of carbon dioxide equivalent or more; and
5. In addition to subsection (2) and (4), a specific greenhouse gas, without calculating the carbon dioxide equivalent, also needs to emit greater than 100 or 250 tons per year, whichever is applicable, to be regulated.

Trail King is not one of the 28 named PSD source categories; therefore, its PSD threshold is 250 tons per year, except for greenhouse gases.

4.2 Potential Emissions

Annual potential emissions for each applicable pollutant are calculated from the maximum design capacity listed in the application, assuming the unit operates every hour of every day of the year or 8,760 hours per year.

4.3 Spray Booths

The emission factors for the spray booths were derived from the material safety data sheets for the products used in the spray booths. The potential emission rate is estimated from the amount of paint and solvent used in the spray booths and the amount of time the booths are operated. Trail King identified in the permit application that the spray booth operates 18 hours per day for 251 days per year (4,518 hours per year). Potential emissions are calculated assuming that the facility operates 24 hours per day 365 days per year (8,760 hours per year). Therefore, the potential emissions for the spray booths will be calculated by multiplying the actual emissions by the ratio in Equation 4-1.

Equation 4-1 – Spray Booth Multiplying Factor

$$\frac{8{,}760 \text{ potential operating hours/year}}{4{,}518 \text{ actual operating hours/year}} = 1.9$$

Potential uncontrolled emissions are those that would occur with no emission controls. Dry filter media are used to control particulate matter; however, the filters do not control volatile organic compound. Table 4-1 provides a summary of the potential emissions from the spray booths.

Table 4-1 – Spray Booth Potential Emissions (tons per year)

Pollutant	Actual Emissions	Potential Emissions
Total Volatile Organic Compounds	31.24	**54.23**

Trail King's potential volatile organic compound emissions are less than 250 tons per year; therefore, Trail King is considered a minor source under the PSD program and is not subject to PSD requirements.

Trail King's paint booths do not produce any greenhouse gas emissions. Therefore, the greenhouse gas emissions are considered negligible.

5.0 National Emission Standards for Hazardous Air Pollutants

The Department reviewed 40 CFR Part 61 – National Emission Standards for Hazardous Air Pollutants and determined that Trail King is not applicable to any subparts at this time.

6.0 Maximum Achievable Control Technology Standards

6.1 Potential HAP Emissions

The federal Maximum Achievable Control Technology Standards are applicable to both major and area sources of hazardous air pollutants. A major source of hazardous air pollutants is defined as having the potential to emit 10 tons or more per year of a single hazardous air pollutant or 25 tons per year or more of a combination of hazardous air pollutants. An area source is a source that is not a major source of hazardous air pollutants.

The emission factors for the spray booths were derived from the material safety data sheets for the products used in the spray booths. The potential emission rate is estimated from the amount of paint and solvent used in the spray booths and the amount of time the booths are operated. Trail King identified in the permit application that the spray booth operates 18 hours per day for 251 days per year (4,518 hours per year). Potential emissions are calculated assuming that the facility operates 24 hours per day 365 days per year (8,760 hours per year). Therefore, the potential emissions for the spray booths will be calculated by multiplying the actual emissions by the ratio in Equation 4-1.

Potential uncontrolled emissions are those that would occur with no emission controls. Dry filter media are used to control particulate matter; however, the filters do not control hazardous air pollutant emissions. Table 6-1 provides a summary of the potential emissions from the spray booths.

Table 6-1 – Spray Booth Potential Emissions (tons per year)

Pollutant	Actual Emissions	Potential Emissions
Hazardous Air Pollutants		
EthyleneGlycol But Ether Acetate	1.02	1.94
Toluene	0.16	0.31
Total Hazardous Air Pollutants	1.19	**2.26**

Based on Table 6-1, Trail King is considered an area source of hazardous air pollutants.

The Department reviewed the maximum achievable control technology (MACT) standards and determined that the following standards may be applicable.

6.2 ARSD 74:36:08:37 – 40 CFR Part 63, Subpart MMMM

40 CFR Part 63, Subpart MMMM is subject to owners or operators of miscellaneous metal parts and product surface coating facilities located at a major source of hazardous air pollutants.

Trail King is not considered a major source of hazardous air pollutants emissions and, therefore, is not subject to this subpart.

6.3 ARSD 74:36:08:108 – 40 CFR Part 63, Subpart HHHHHH

40 CFR Part 63, Subpart HHHHHH is applicable to owners or operators of paint stripping operations, miscellaneous surface coating area sources and the spray application of coatings containing compounds of chromium (Cr) lead (Pb), manganese (Mn), nickel (Ni), or cadmium (Cd), to any part or product made of metal or plastic, or combinations of metal and plastic that are not motor vehicles or mobile equipment.

The National Emission Standards for Paint Stripping and Miscellaneous Surface Coating Operations is applicable to area sources that engage in any of the following:

1) Paint stripping operations that use Methylene Chloride (MeCl)- containing paint stripping formulations;
2) Spray application of coatings to motor vehicles and mobile equipment
3) Spray application of coatings to a plastic and/or metal substrate where the coatings contain compounds of Chromium (Cr), Lead (Pb), Manganese (Mn), Nickel (Ni), or Cadmium (Cd).

Trail King does not use methylene chloride for any paint stripping operations. The Material Safety Data Sheets submitted by Trail King for the various paints and coatings indicate that the paints and coatings do not contain compounds of chromium, lead, manganese, nickel, or

Therefore, Trail King does not meet requirements 1 or 3. However, Trail King does spray apply coatings to "mobile equipment".

In accordance with ARSD 74:36:08:108, as referenced to 40 CFR § 63.11170 the owner/operator may petition the Secretary for an exemption from 40 CFR 63 Subpart HHHHHH if the facility can demonstrate, to the satisfaction of the Secretary, that they spray apply no coatings that contain the target hazardous air pollutants (Chromium, Lead, Manganese, Nickel, or Cadmium). Petitions must include a description of the coatings that the facility spray applies and certification that the facility does not spray apply any coatings containing the target hazardous air pollutants.

In a phone conversation with Tracie Chamberlin, Safety Manager, on October 19, 2012, Trail King would like the application to be used as a petition for an exemption. Since Trail King does not use coatings containing the target hazardous air pollutants, Trail King is not applicable to this subpart.

6.4 ARSD 74:36:08:119 – 40 CFR Part 63, Subpart XXXXXX

The Department reviewed the national emission standards and determined that Trail King may be subject to 40 CFR Part 63, Subpart XXXXXX. This subpart is applicable to owners or operators for the control of hazardous air pollutants for nine metal fabrication and finishing area source categories. An area source has the potential to emit less than 10 tons per year of a single hazardous air pollutants or 25 tons per year of a combination of hazardous air pollutants. The provisions of this subpart are applicable to an area source that is primarily engaged in the operations in one of the following nine source categories:

1. Electrical and Electronic Equipment Finishing Operations (NAICS codes 335999 and 335312);
2. Fabricated Metal Products (NAICS codes 332117 and 332999);
3. Fabricated Plate Work (Boiler Shops) (NAICS codes 332313, 332410, and 332420);
4. Fabricated Structural Metal Manufacturing (NAICS code 332312);
5. Heating Equipment, except Electric ((NAICS code 333414);
6. Industrial Machinery and Equipment Finishing Operations (NAICS codes 333120, 333132 and 333911);
7. Iron and Steel Forging (NAICS code 33211);
8. Primary Metal products Manufacturing (NAICS code 332618); and
9. Valves and Pipe Fittings (NAICS code 332919).

The provisions of this subpart are applicable to new and existing sources primarily engaged in one of the nine operations listed above that use materials that contain or have the potential to emit metal fabrication or finishing metal hazardous air pollutants. Trail King has a Standard Industrial Classification (SIC) Code of 3715 and a North American Industry Classification System (NAICS) code of 336212. Trail King is not one of the nine operations applicable to this subpart.

7.0 State Air Emission Limits

7.1 State Requirements

Total suspended particulate and sulfur dioxide emission limits are applicable to fuel burning units and process industry units. Visible emissions are applicable to any unit that discharges to the ambient air. In accordance with ARSD 74:36:12, a facility may not discharge into the ambient air more than 20 percent opacity for all units. Trail King must control the opacity at less than 20 percent for the all units.

7.2 Performance Testing

Trail King is required to maintain records on the amount of volatile organic compounds emitted from its operations to determine compliance with permit limits on a monthly basis and report the results to the Department on a periodic basis. Therefore, Trail King is not required to conduct performance tests.

7.3 Minor Source

Any source operating in South Dakota that meets the requirements of the Administrative Rules of South Dakota (ARSD) 74:36:05:03 is required to obtain a Title V air quality permit. Trail King's volatile organic compound emissions are less than 100 tons per year and hazardous air pollutant emissions are less than 10 tons per year for a single hazardous air pollutant and 25 tons per year of a combination of hazardous air pollutant. Based on the emission estimates, Trail King is considered a minor source.

7.4 Summary of Applicable Requirements

Any source operating in South Dakota that meets the requirements of ARSD 74:36:04:02 is required to obtain a minor air quality permit. Based on the facility's potential emissions, Trail King is a minor source for volatile organic compounds because the potential emissions are greater than 25 tons per year but less than 100 tons per year. Trail King is a minor source for hazardous air pollutants because the potential emissions are less than 10 tons per year for a single hazardous air pollutant and less than 25 tons per year for a combination of hazardous air pollutants. Therefore, Trail King will be required to operate within the requirements stipulated in the following regulations under the minor permit program:

- ARSD 74:36:04 – Operating Permits for Minor Sources;
- ARSD 74:36:12 - Control of Visible Emissions.

8.0 Recommendation

Based on the information submitted in the air quality permit application, the Department recommends that Trail King's existing minor permit be renewed. Any questions on this review should be directed to Jill Riedel, Engineer II, Department of Environment and Natural Resources.